

MSRC RESPONSE
SITE SAFETY PLAN (SSP)
On Water Recovery
Rev. 1

INCIDENT: Mississippi Canyon 252

DATE: 4/25/10

LOCATION: GOM – MC Blk 252

SITE HAZARD INFORMATION

Product: Crude Oil

MSDS? Yes (Attachment 4)

Quantity: Unknown

2-Page SSP Attached? YES, Site Specific Safety Plans will be developed and attached for each location with specific requirements, as necessary and applicable.

Note: Applicable topics in the MSRC EHS Compliance Procedure manual should be referred to and complied with as necessary. Chapter 25 (Attachment 5) – Spill Response Safety specifically applies to responses.

ACCIDENTS - All accidents will be immediately reported to the immediate supervisor and/or Safety Officer and investigated by the supervisor of the person(s) involved. Complete an accident form and forward a copy to the Safety Officer. Forms are available from the Safety Officer.

DRUG ALCOHOL POLICY - Possession or use of intoxicants or drugs on work sites is prohibited. Employees may not report for work or perform duties while under the influence of intoxicants or drugs.

MEDICATIONS - All employees who are taking prescribed medication that could affect work performance, shall advise their supervisor prior to beginning work. Supervisors should advise or consult with the Safety Supervisor on the use of prescribed medications.

SAFETY EQUIPMENT - In addition to prescribed chemical PPE, side shield safety spectacles, hard hats and steel-toed safety shoes shall be worn. No tennis shoes, tank top shirts or shorts will be permitted in operational areas. The MSRC Safety Officer will report to the IC safety Officer personnel who continuously fail to wear the required PPE.

SAFETY SHOES - Safety shoes or boots shall be worn in all operating areas. Safety footwear must conform to American National Standards Institute Number (ANSI Z-41.1 - 1967). The Site Supervisor may relax this requirement for brief visits by personnel to operating areas

HAND PROTECTION - A variety of work gloves are available for protection against heat and flame, cold, petroleum products, corrosive materials, moisture, mechanical abrasion, electricity, and sharp and rough surfaces. Employees shall wear suitable gloves while engaged in all operations that are hazardous to the hands.

EYE WASH - Eyewash stations should be located on site. Subsequent medical examination of the employee shall be conducted after use. All eyewash stations shall be inspected on a daily basis. Portable eyewash stations will be kept filled completely with either potable water or saline solution.

EQUIPMENT OPERATIONS FOR CLEANUP/CONTAINMENT

Operators for front-end loaders, bulldozers, cranes and other heavy equipment, must be trained and qualified. Proof of training should be requested. The operator and helper must be familiar with proper signaling. Buckets must not be used as a lift; hard-hats must be worn; and a fire extinguisher must be present.

Cranes must be operated in accordance with the manufacturers' instructions and established construction practices. Crane certifications should be requested. Wire rope slings must have load test certificates per regulatory requirements. Cranes must be operated only where the ground provides adequate support. Rigging components must be inspected daily. Only certified wire rope slings with manufactured swedges or manufactured web slings will be used. Each sling must be marked with its rated capacity.

Hand/Power Tools: The greatest hazards posed by hand tools result from misuse and improper maintenance. Spark resistant tools should be used around flammable substances.

Power tools: Never carry power tools by the cord; never yank the cord to unplug the tool; keep cords and hoses away from heat, oil and sharp edges; disconnect tools when not in use and before servicing; maintain tools; keep them sharp and clean; safeguard hazardous moving parts of the tool; and protect the operator from point of operation, in-running nip points, rotating parts, and flying chips and sparks.

ELECTRICAL HAZARDS - Electrical hazards shall be identified and marked with placards, barricades, or tape.

GFCI - At outside locations, all outlets which are not a part of the permanent wiring of the building or structure, must have ground-fault circuit interrupters (GFCI). The GFCI shall be located at the end of the extension cord, adjacent to the electric cord from the tool.

FATIGUE - Working long hours without rest, coupled with the stress and required PPE, contributes to fatigue. Rest is the primary treatment.

FIRE, AND EXPLOSION - Flammable and combustible materials, such as fuels for equipment or the spilled material itself, may be encountered. Cleanup chemicals such as solvents may also be in use. Refer to the container label or proper MSDS for more information on these materials.

Precautions to be taken when working with either flammables or combustibles:

- No smoking
- Store in approved, labeled containers
- Ensure containers used to transfer materials are properly grounded
- Provide fire extinguishers

HEAT STRESS - Heat stress can result from heavy labor in protective and/or impermeable clothing. Heat buildup can lead to heat rash, heat cramps, dehydration, heat exhaustion or heat stroke. Supervisors must monitor employees when work loads are heavy and temperatures

and/or humidity are high. Fluids shall be available at all times and personnel will be encouraged to drink fluids during rest periods. Shaded rest areas will be available where feasible.

HELICOPTER OPERATIONS - Safe work practices for passengers and other personnel include:

- Passengers must receive a safety briefing before liftoff.
- Passengers and ground crew members shall stay in a crouched position and must be in clear view of the pilot while approaching or departing the helicopter.
- Passengers and ground crew should approach/depart from the **FRONT** of the helicopter only when signaled by the pilot.
- Loose fitting clothing or other gear must be secured or removed within 100 feet of operating helicopters.
- Personnel shall maintain a distance of 50 feet from helicopters while rotors are turning, unless specific work practices are developed for closer work.
- Passengers shall wear seat belts at all times and personal floatation devices when flying over water.
- Passengers and ground crew shall wear hearing protection (which may include communication headsets or helmets) around operating helicopters.
- Passengers shall assist the pilot in watching for other traffic or ground obstacles, as directed by the pilot.
- During an emergency landing in water:
 - Do not exit until instructed to do so by the pilot.
 - Do not inflate personal floatation devices until outside.

LIFTING - Use machinery and lift-aiding equipment before lifting heavy loads. Use team work for heavy and numerous small loads. Use extra care while lifting in protective gear

NOISE - High noise areas and equipment will be identified. Areas requiring the use of hearing protection will be posted and hearing protection made available. Hearing protection should be worn where noise prevents hearing ordinary conversation. Work conducted in the proximity of pumps, compressors, and other powered equipment often leads to excessive noise exposure. Ear plugs and other types of hearing protection screen out higher noise frequencies and can actually improve a persons ability to understand voice communications under conditions of high noise.

HEARING PROTECTION - Hearing protection should be used by anyone who suspects that a noise source to which they are exposed may exceed allowable limits. Persons within 15 feet of such operations should also wear hearing protectors. Ear -muffs are recommended for persons working in areas where noise levels (equipment and tools) are in excess of 105 dBA.

FIRST AID FOR BITES, STINGS, AND POISONOUS PLANT CONTACT

Bee Stings: Persons with a severe allergy to bee stings should carry an emergency treatment kit and should notify supervisor of allergy upon arrival on site.

- Treatment:
 - Wash the wound with soap and water.

- If symptoms of allergic reaction are present, request medical assistance and treat for shock.
- If stinger remains embedded, try to remove it without squeezing it (this may inject more poison into the wound). Avoid using tweezers since it may squeeze the venom sac. Scrape the stinger out with a plastic card (credit card or driver's license).
- Use a cold pack to reduce/limit swelling. Do not place a cold pack directly on the skin. Place gauze pad or clean cloth on the skin to prevent direct skin contact with the pack.
- Keep the wounded area below the level of the heart to slow the venom's spread.
- Do not administer caffeinated beverages or alcohol since this will dilate blood vessels, enhancing spread of poison.

Spider Bites:

- Treatment:
 - Wash the wound with soap and water.
 - Request medical assistance to address symptoms. The person usually recovers after several days of illness.
 - If symptoms of allergic reaction are present, treat for shock.
 - A cold pack may be helpful if the bite is quickly recognized.

Wildlife:

- Avoid contact with wildlife, particularly oiled, injured, or dead wildlife. Report visual observations of such wildlife to your immediate supervisor.
- Rescue of wildlife will be made by trained personnel only.
- Be aware of your surroundings!

POOR VISIBILITY - Lighting shall be maintained for dark areas after sunset to ensure sufficient illumination. (Table H-120.1 of 29 CFR 1910.120(m))

PUMPS AND HOSES - Hoses present a tripping hazard.

STEAM AND HOT WATER - Can cause severe burns. Wear gloves and eye/face protection when handling or in the area. Do not spray in the direction of other personnel.

UV RADIATION - Sunscreens with the appropriate protection factor and UV-tinted safety glasses may be needed. Other types of radiation, such as from welding and cutting, may also be a hazard. Avoid direct visual contact and use proper eye protection.

SLIPS, TRIPS AND FALLS - Slips, trips and falls are the major cause of injuries at an oil spill. Engineered controls for oil covered areas are preferred over PPE. Oil-resistant safety-toe boots with non-slip soles should be worn in areas containing oil-covered rocks. Avoid loose protective foot covering. Open manholes, trenches, or similar hazards shall be identified and marked.

WEATHER - Weather conditions change frequently and may require halting or modifying cleanup operations.

WORK NEAR WATER - All personnel working in boats, on docks, or generally within 10 feet of water deeper than 3 feet, shall wear US Coast Guard approved Type I, II, III, or V personal flotation devices unless protected by guardrails.

BOATS - Ensure that all boats and operators comply with regulations. In addition to the items below, such items as USCG approved fire extinguishers, backfire flame control, powered ventilation, sound signaling devices (different from emergency signals), navigation lights/signals, pollution placards, and marine sanitation devices, may be required.

- Boat operators must familiarize themselves and passengers with safety features and equipment on their boats.
- Boats must be operated by qualified individuals.
- Life jackets, work vests, cold water immersion suits, or other USCG approved Personal Flotation Devices (PFDs) must be worn.
- Types of PFDs:
 - Type I- Off shore life jacket provides the most buoyancy.
 - Type II - Near-shore buoyancy vests are intended for calm, inland water.
 - Type III - Flotation aids are good for calm, inland water. Examples: float coats, fishing vests, and ski vests.
 - Type IV - Throwable devices, not intended to be worn or to replace those that are worn.
 - Type V - Special Use. Intended for specific activities (according to the conditions on the labels). Examples: deck suits, cold water immersion suits, work vests, and hybrid PFDs.
 - Type VI - Hybrid Inflatable. These PFDs contain a small amount of inherent buoyancy and an inflatable chamber.
 - Boats should generally not be operated for oil recovery after sunset. If this is required, areas of operation should be carefully prescribed, and boat operators maintain communications. Each boat should be equipped with running lights and emergency signaling devices, and personnel onboard should be wearing night signaling devices.
- Distress signals (three or more for day and three or more for night):
 - Carried on all vessels. USCG-approved pyrotechnic visual distress signals include red flares, range smoke, and aerial red meteors or parachute flares. Pyrotechnic devices should not be used near flammable product spills.
- Additional:
 - Boat operators must keep their supervisors informed of any change in their work area.
 - Portable fuel tanks should be filled outside of the boat.
 - The buddy system must be observed in boats.
 - Personnel should remain seated while boat is underway.
 - Boat operators must ensure that boats are not overloaded.
 - Personnel should wear appropriate shoes/boots designed to help maintain traction on wet surfaces.
 - Safety sunglasses or hearing protection should be worn where appropriate.
 - Fixed ladders or other substantial access/egress should be provided.
 - Workers should be cautioned about using their legs or arms to fend off

TIDES - Site workers must be aware of tides to avoid becoming trapped on a remote beach area. If you are trapped on a beach by high tide move to a high point of land and remain there until the tide goes out and you can exit the area. Under no circumstances should you try to walk around a protruding headland during a high tide.

LOCKOUT / TAGOUT - Lockout is the preferred method of isolating equipment from energy sources. This procedure shall be used to ensure that the equipment is isolated from all potential hazardous energy sources, and locked or tagged out before an employee performs any maintenance activity where unexpected start-up or release of energy could cause an injury. Energy sources can be electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy. Prior to performing any work activities, the employee will operate the start and stop controls on the equipment to ensure the equipment has been properly deactivated. After testing, the equipment must be in neutral or off.

SITE SECURITY AND CONTROL – Refer to the Unified Command/OSC for direction. Site Specific Security and Control are as follow: Security provided by MSRC personnel and by security service at gate (check in).

MSRC PERSONNEL DECONTAMINATION PLAN

DECONTAMINATION ZONES - Decon is carried out in the Contamination Reduction Zone.

If decon crews are available to assist in the procedure, they must wear appropriate protective clothing. Work clothing and other personal protective equipment, not being reused, shall be properly packaged and labeled for disposal.

DECON STATIONS - The ground at each station should be covered with diked PVC sheets to prevent contamination of the soil. The procedures are as follows:

- Deposit contaminated equipment
- Remove tape and scrub boots, outer gloves and protective clothing with decon solution. Rinse with water. Deposit in designated containers.
- Remove boots. Deposit in designated containers.
- Remove inner gloves last and deposit in designated containers.
- Wash hands and face with mild soap.

EQUIPMENT FOR DECON

- Shallow plastic tubs
- Mild detergent
- Long-handled, soft-bristle scrub brushes
- Benches or stools
- Towels
- Wash basins
- Plastic drop cloths
- Decon solution (detergent in water)
- Rinse water
- Tool/equipment drop containers, trash cans, trash bags

AIR MONITORING PLAN

INITIAL SITE SURVEY - A site survey will occur prior to entry into the impacted area. Inspected Passport meters, IBRID MX6 meters, CMS meters and Drager Calorimetric Tubes will be used. Sampling will be conducted for Hydrogen Sulfide and Lower Explosive Limits (LEL) with the IBRID MX6 meters. The CMS will be used to detect Benzene. Drager Bellows Pump with chemical specific calorimetric tubes, is a backup unit for H₂S and Benzene detection.

After initial characterization of the immediate spill site has been completed, monitoring will be conducted in adjacent areas where spectators have gathered, commercial and residential areas. Schools, hospitals, nursing and convalescent homes, and any other areas where personnel particularly sensitive to respiratory complications, may be located will be identified and included in continuing monitoring efforts. In addition, regular readings will be taken downwind of the spill.

Monitor for H₂S, CO, Benzene, LEL and TPH.

Initial Site Entry forms, Site Characterization Log forms, Specific Site Safety Plans, along with field notes are required documentation.

Air Monitoring equipment must be calibrated at the beginning of each shift and noted in the air monitoring log. Maintenance records on the individual instrument may be required.

SITE MONITORING PLAN - Follow the Site Assessment Procedure in the SEHS Compliance Procedure manual. Qualified MSRC personnel, qualified contractor personnel, or an Industrial Hygienist (IH) may perform the air monitoring.

Note 1: Benzene monitoring may be discontinued based on data collected indicating no detectable concentrations over an acceptable period of time.

Note 2: Monitoring locations will be established and monitoring continued on a regular schedule as necessary. The Incident Command and/or Site Safety Officer will determine time and duration of air monitoring.

EQUIPMENT CALIBRATIONS - All monitoring equipment will be calibrated in accordance with manufacturer's recommendations prior to each day's use and periodically as needed during the work shift. Equipment will be calibrated by trained and competent personnel.

PERSONAL AIR MONITORING - Personal air monitoring shall be performed on personnel that have the highest potential for exposure to hazardous substances and health hazards approach or exceed permissible exposure limits. OSHA or NIOSH methods will be used to collect the sample. An American Industrial Hygiene Association (AIHA) accredited laboratory will be used to analyze the samples with the most expedient analysis time ordered.

TRAINING REQUIREMENTS – All MSRC field personnel are Hawoper trained appropriately per the OSHA Standard 29 CFR 1910.120. Consult the MSRC Safety Officer for training records and documentation.

Attachment 1

Dispersants Safety Plan

This plan provides guidelines covering several aspects on the use of dispersants. The information is for guidance purposes only and does not take into account every possible hazard with distinctive and individual products. It is stressed that every product has to be supplied complete with a material safety data sheet (MSDS) containing detailed information covering each one of the items mentioned below. Should these statements differ from the ones reported in the material safety data sheet provided by the suppliers, THE DATA SPECIFIED IN THE MATERIAL SAFETY DATA SHEET OF THE PRODUCT SHALL ALWAYS PREVAIL. The dispersant being used is _____Corexit 9527 & 9500_____. This dispersant is being applied neat, with no dilution. The Material Safety Data Sheet will be provided if requested.

LOADING SAFETY

Dispersants are not particularly hazardous to humans, but are chemicals, which must be handled correctly, particularly due to their strong degreasing action.

ALL FEDERAL AND STATE FIXED-WING AIRCRAFT AND HELICOPTER SAFETY RULES WILL BE FOLLOWED

1. The handling crew must wear:
 - Chemical splash goggles or face shield
 - Polyvinylchloride Chemical Protective Gloves, as specified in the MSDS
 - Polyethylene coated Tyvek, chemical protective clothing
2. If possible, handling should be done:
 - In ventilated areas
 - Keeping to windward

If this is not possible:

 - Appropriate respiratory protection must be worn if ventilation is poor or for nuisance odors. An air purifying respirator with organic vapor cartridges must be used.
3. Storage:
 - Dispersants shall be stored away from heat sources and if possible not in direct sunlight.
4. Fires:
 - Will be extinguished by use of chemical powder, BC class or carbon dioxide extinguisher, or by foam.
 - A fire extinguisher rated at least 20 BC will be available during transfer operations.

- Conductive delivery hoses, or bonding and proper grounding is required during loading operations.

5. Leaks:

- Must be stopped immediately
- Spilled material should be contained by means of sand, soil or other inert absorbent materials
- The polluted area should be defined by suitable fencing-any spilled dispersant will make deck areas slippery

DELIVERY SAFETY

Aircraft and Airspace Coordination

- The dispersant spray aircraft and all spotter aircraft, resupply, personnel transfer, observation and other aircraft in the affected area will coordinate radio frequencies with each other and the command net.
- Prior to spraying the dispersant, the affected area will be announced over the radio, all cleanup vessels, boundary marking vessels, and other response equipment and personnel will be given adequate time to retreat to a safe area.

On Water Personnel

- **NO PERSONNEL OR VESSELS WILL BE ALLOWED TO SHELTER IN PLACE**
- All personnel and equipment will retreat to upwind of the delivery area, if at all possible.
- The vessel nearest the sprayed area will run active organic vapor monitoring devices. Other personnel and area monitoring devices may be required based upon local circumstances.
- In the event that a vessel gets sprayed, the following section on emergency procedures will be followed as applicable.
- An investigation as to why the vessel was sprayed will ensue.
- Required follow up personal medical monitoring or biological monitoring will be undertaken.

First Aid and Emergency Procedures

Inhalation:

- The injured person shall be immediately removed from the polluted area and transferred to a clean and ventilated environment
- Call emergency medical support at once
- If breathing stops, artificial respiration is necessary

Contact with the skin:

- Wash with water for at least 15 minutes
- Do not apply anything to the eyes unless prescribed by a doctor
- Have the injured person undergo a medical check as soon as possible

Ingestion:

- Do not induce vomiting
- Do not give any alcohol, milk or fatty foods
- Nothing shall be given orally to an unconscious person
- Administer water as a diluting agent
 - Have the injured person attended by a doctor at once

Attachment 2

MARINE SPILL RESPONSE CORPORATION CONTRACTOR HEALTH & SAFETY SUPPORT SERVICES

EMT Duties Required for Spill Response

- Bring Personal Protective Equipment (PPE) Contractor must bring basic PPE ,i.e., hard hat, safety shoes or boots, eye protection, hearing protection & “APR” that the individual has been fit tested for. **Note: MSRC cannot fit test or issue respirators to personnel that do not have medical/pulmonary function test clearance for respirator use.**
- EMT should have completed water survival training to ensure ability to travel by helo and work on water.
- Maintain contact with home office during transit to staging point to ensure early notification of any change in embarkation point location or response instructions
- Bring “field” kit of medical supplies and “ALS” equipment (if available) for emergencies (Note: MSRC 210’ response vessels are equipped with AED’s)
- Check in with MSRC Supervisor on site upon arrival
- Perform equipment/medication inventory upon arrival
- Conduct & log baseline assessment of vital signs for assigned personnel
- Serve as Safety / Decontamination Control Officer (perform routine duties associated with personnel decon setup and control)
- Provide medical support services as appropriate and document all incidents requiring medical assessment and/or treatment; complete MSRC injury reports as required
- Complete Field Log with daily activity information
- Routine check-in/call-in procedure (contact designated MSRC Rep. daily)

- Provide daily time accounting & equipment summary for invoice back-up (daily work ticket must be signed by MSRC Rep. each day)
- Provide individual transportation (truck or other vehicle for Contractor's transportation to a site) & communication equipment (cell phones for onshore & nearshore responses) for Health & Safety support personnel.

Attachment 3

MARINE SPILL RESPONSE CORPORATION CONTRACTOR HEALTH & SAFETY SUPPORT SERVICES

Safety / Industrial Hygiene Duties Required for Spill Response

- Bring Personal Protective Equipment (PPE) Contractor must bring basic PPE, i.e., hard hat, safety shoes or boots, eye protection, hearing protection & “APR” that the individual has been fit tested for. **Note: MSRC cannot fit test or issue respirators to personnel that do not have medical/pulmonary function test clearance for respirator use.**
- Check in with MSRC Supervisor on site upon arrival
- IH Tech must be trained in water survival to permit crew change by helo and work on water.
- Perform equipment inventory & monitoring instrument calibration upon arrival
- Perform site assessments & air monitoring. Refer to Chapter 25
- Complete required “Site Safety Plan(s)” for assigned response site(s)
- Conduct safety briefings (site hazards, security, decon, control, etc.)
- Serve as Safety / Decontamination Control Officer (perform routine duties associated with personnel decon setup and control)
- Complete Field Logs with daily activities/monitoring/sampling information
- Routine check-in/call-in procedure (contact designated MSRC Rep. daily)
- Provide daily time accounting & equipment summary for invoice back-up (daily work ticket must be signed by MSRC Rep. each day)
- Provide individual transportation (truck or other vehicle for Contractor’s transportation to a site) & communication equipment (cell phones for onshore & nearshore responses) for Health & Safety support personnel.

Attachment 4

MATERIAL SAFETY DATA SHEET

CRUDE OIL

Print Date: 01/01/2002 ***FOR "DISCLAIMER OF LIABILITY", SEE THE STATEMENT ON LAST PAGE*** Page 1 of 7

IMPORTANT: Read this MSDS before handling and disposing of this product and pass this information on to employees, customers, and users of this product.

1. PRODUCT and COMPANY IDENTIFICATION

Material Identity

Crude Oil

Trade Name(s)

Oriente, Cano Limon, Line 63, Shell-Ventura, SJV Light, Rainbow, West Texas
Inter-Cushing, Peace River-Canadian, Federated Crude-Canadian, Pembina
Crude-Canadian, Forcados, Cabinda, Basrah Light, Basrah, Arab Medium,

Other Name(s)

Earth Oil, Petroleum Oil, Rock Oil, Zafiro

Chemical Description

This material is a C1 to C50 hydrocarbon liquid which contains approximately
.9 to 2.8 wt% sulfur compounds

Manufacturer's

Address

BP West Coast Products LLC
Carson Business Unit
1801 E. Sepulveda Boulevard
Carson, California 90749-6210
BP West Coast Products LLC
Cherry Point Business Unit
4519 Grandview Road
Blaine, Washington 98230

Telephone Numbers Emergency Health Information: 1 (800) 447-8735

2. COMPONENTS and EXPOSURE LIMITS

Exposure Limits

ACGIH OSHA

Component¹ CAS No. % Composition By Volume² TLV PEL³ Units Type

CRUDE OIL, PETROLEUM

8002-05-9 EQ 100 N/AP N/AP

which contains:

BUTANE

106-97-8 AP 0.8 to 1 800 800 pm TWA

HEXANE (N-HEXANE)

110-54-3 AP 0.3 to 1 50 50 ppm TWA

skin

ISOPENTANE

78-78-4 AP 0.3 to 1.5 N/AP 750 ppm STEL

600 600 ppm TWA

PENTANE

109-66-0 AP 1.5 to 2.5 N/AP 750 ppm STEL

600 600 ppm TWA

Other applicable exposure guidelines:

COAL TAR PITCH VOLATILES, AS BENZENE SOLUBLES ⁽⁴⁾

65996-93-2 0.2 0.2 mg/m³ TWA

OIL MIST, MINERAL

8012-95-1 10 N/AP mg/m³ STEL

5 5 mg/m³ TWA

STODDARD SOLVENT

8052-41-3 100 100 ppm TWA

Stoddard Solvent exposure limits are listed as an exposure guideline for hydrocarbon vapors that may be similar

to those derived from crude oil.

Elang Crude, Girassol

CRUDE OIL MSDS No. **RS296**

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Since specific exposure standards or control limits have not been established for this material, the exposure limits

shown here are suggested as minimum control guidelines.

1 Carcinogen displayed after Component Name. Listed by (1) NTP, (2) IARC, (3) OSHA, (4) Other

2 See Abbreviations on last page

3 The OSHA exposure limits were changed in 1993 due to a federal court ruling. ARCO has chosen to list the 1989 OSHA exposure limits in this document as they are generally more

stringent and therefore more protective than the current exposure limits. (Refer to 29 CFR 1910.1000).

3. HAZARD IDENTIFICATION

IMMEDIATE HAZARDS

DANGER

HIGHLY FLAMMABLE! OSHA/NFPA Class 1B flammable liquid. KEEP AWAY FROM HEAT, SPARKS, AND

OPEN FLAME! CONTAINS PETROLEUM DISTILLATES! Avoid breathing vapors or mists. Use only with adequate ventilation. If swallowed, do not induce vomiting since aspiration into the lungs may cause chemical

pneumonia. Obtain prompt medical attention.

May cause irritation or more serious skin disorders! May be harmful if inhaled! May cause irritation of the nose,

throat, and lungs, headache, dizziness, drowsiness, loss of coordination, fatigue, nausea and labored breathing.

May cause irregular heartbeats. Avoid prolonged or repeated liquid, mist, and vapor contact with eyes, skin, and

respiratory tract.

Wash hands thoroughly after handling.

Sulfur compounds in this material may decompose to release hydrogen sulfide gas which may accumulate to

potentially lethal concentrations in enclosed air spaces. Vapor concentrations of hydrogen sulfide above 50 ppm,

or prolonged exposure at lower concentrations, may saturate human odor perceptions so that the smell of gas

may not be apparent. **DO NOT DEPEND ON THE SENSE OF SMELL TO DETECT HYDROGEN SULFIDE!**

Long-term tests show that similar crude oils have produced skin tumors on laboratory animals.

Crude oils contain some polycyclic aromatic hydrocarbons which have been shown to be carcinogenic after

prolonged or repeated skin contact in laboratory animals.

Routes of Exposure Signs and Symptoms

Inhalation

(Primary)

Vapors or mists from this material, at concentrations greater than the recommended exposure limits in Section 2, can cause irritation of the nose, throat, and lungs, headache, dizziness, drowsiness, loss of coordination, fatigue, nausea and labored breathing. Airborne concentrations above the recommended exposure limits are not anticipated during normal workplace activities due to the slow evaporation of this material at ambient temperatures.

Exposure to moderate airborne concentrations of hydrogen sulfide (less than 50 ppm) can result in irritation of the eyes, nose and throat, headache, dizziness, shortness of breath, nausea and nervousness. Exposure to hydrogen sulfide vapor above 200 ppm may cause irritation of mucous membranes, inflammation of the lungs, accumulation of fluid in the lungs, irregular heartbeats, unconsciousness with convulsions or impaired breathing with suffocation. Exposure to higher concentrations of hydrogen sulfide vapor (above 500 ppm) may cause rapid death.

Eye Contact May cause slight eye irritation.

Skin Contact Moderate skin irritation may occur upon short-term exposure.

Exposure to sunlight may increase the degree of skin irritation.

Absorption through the skin may occur and produce toxic effects (see Summary of Chronic Hazards).

Ingestion May cause irritation of the mouth, throat and gastrointestinal tract leading to nausea, vomiting, diarrhea, and restlessness. May cause headache, dizziness, drowsiness, loss of coordination, fatigue, nausea and labored breathing.

ASPIRATION HAZARD: Aspiration into the lungs may cause chemical pneumonia. This material can enter the lungs during swallowing or vomiting and may cause lung inflammation and damage which in severe cases may be fatal.

CRUDE OIL MSDS No. **RS296**

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Summary of

Chronic Hazards

and Special

Health Effects

Personnel with preexisting central nervous system (CNS) disease, skin disorders, or chronic respiratory diseases should be evaluated by an appropriate health professional before exposure to this material.

Prolonged/repeated skin exposure, inhalation or ingestion of this material may result in adverse dermal or systemic effects. Avoid prolonged or repeated exposure.

May be harmful if absorbed through the skin. Prolonged or repeated contact may create cancer risk, organ damage, and adversely affect reproduction, fetal development and fetal survival. Avoid all skin contact.

Neurotoxic effects have been associated with n-hexane, a component of this material. Avoid prolonged or repeated exposure.

See Section 11 for Additional Toxicological Information.

4. EMERGENCY and FIRST AID

Inhalation Immediately remove personnel to area of fresh air. For respiratory distress, give oxygen, rescue breathing, or administer CPR (cardiopulmonary resuscitation) if necessary. Obtain prompt medical attention.

Eye Contact Flush eyes with clean, low-pressure water for at least 15 minutes, occasionally lifting the eyelids. If pain or redness persists after flushing, obtain medical attention.

Skin Contact Immediately remove contaminated clothing. Wash affected skin thoroughly with soap and water. If irritation persists, obtain medical attention.

Ingestion Do not induce vomiting since aspiration into the lungs may cause lipoid pneumonia. Obtain prompt medical attention.

Emergency See above procedures. Personnel with pre-existing central nervous system disease, skin

Medical disorders, chronic respiratory diseases, or impaired liver or kidney function should avoid

Treatment exposure to this product.

Procedures

5. FIRE and EXPLOSION

Flash Point (Method)* Based on NFPA Petroleum, Crude AP 20°F to 90°F **NFPA Hazard Rating:**

Autoignition Temperature (Method)* N/DA **Health:** 2 = Moderate

Flammable Limits (% Vol. in Air* Lower AP 1 + **Fire:** 3 = High

Upper AP 8 + **Reactivity:** 0 = Insignificant

* At Normal Atmospheric Temperature and Pressure + Based on NFPA 325 **Special:**

Fire and

Explosion

Hazards

HIGHLY FLAMMABLE! This material releases flammable vapors at or below ambient temperatures. When mixed with air in certain proportions and exposed to an ignition source, these vapors can burn in the open or explode in confined spaces.

Flammable vapors may travel long distances along the ground before reaching a point of ignition and flashing back.

Open top tanks involved in a fire have a potential for "boil-over" if water or water-in-oil emulsion is at the bottom of the tank. Boil-over may result in a large expulsion of burning oil from the tank, greatly increasing the fire area.

Extinguishing

Media

Foam, Dry chemical, Carbon dioxide (CO₂)

Water and water fog can cool the fire but may not extinguish the fire.

Special

Firefighting

Procedures

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of combustion products and oxygen deficiencies. Cool tanks and containers exposed to fire with water. If firefighters cannot work upwind to the fire, respiratory protective equipment must be worn unless and until atmospheric monitoring indicates that such protection is not required. Improper use of water and extinguishing media containing water may cause frothing which can spread the fire over a larger area. Water fog or spray are of value for cooling tank shells and surfaces exposed to fire, but may not achieve extinguishment.

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6. ACCIDENTAL RELEASE MEASURES

Precautions if

Material is Spilled or Released

Contain spill, evacuate non-essential personnel, and safely stop flow. On hard surfaces, spilled material may create a slipping hazard. Equip cleanup crews with proper protective equipment (as specified in Section 8) and advise of hazards. Clean up by recovering as much spilled or contaminated materials as possible and placing into closed containers. Consult with an environmental professional for the federal, state and local cleanup and reporting requirements for spills and releases.

7. HANDLING and STORAGE

Handling,

Storage and

Decontamination

Procedures

Store and transport in accordance with all applicable laws. **KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME! KEEP CONTAINERS CLOSED, PLAINLY LABELED AND OUT OF CLOSED VEHICLES!** Containers should be able to withstand pressures expected from warming or cooling in storage. Ground all drums and transfer vessels when handling. Store in cool (80°F or below), well-ventilated location. All electrical equipment in storage and/or handling areas should be installed in accordance with applicable requirements of the National Electrical Code (NEC).

KEEP OUT OF REACH OF CHILDREN!

Empty containers retain some liquid and vapor residues, and hazard precautions must be observed when handling empty containers.

For determining National Electrical Code (NEC) Hazardous (Classified) location requirements for electrical installations, consider this material Class 1, Group D.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering

Controls

Where possible, use adequate ventilation to keep vapor and mist concentrations of this material below the Occupational Exposure Limits shown in Section 2. Electrical equipment should comply with National Electrical Code (NEC) standards (see Section 7).

Respiratory Where there is potential for exposure to hydrogen sulfide gas in excess of the permissible exposure limit, a NIOSH/MSHA-approved supplied-air respirator operated in positive pressure mode should be worn.

If hydrogen sulfide gas is not present in excess of permissible exposure limits, a NIOSH/MSHA-approved air-purifying respirator with an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations of hydrocarbon vapor may exceed the exposure limits in Section 2. Where work conditions may generate

airborne mists of the material, also use a high-efficiency particulate pre-filter. Consult a health and safety professional for guidance in respirator selection. Respirator use should comply with OSHA 29 CFR 910.134.

CAUTION: The protection provided by air-purifying respirators is limited. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are not known, or if concentrations exceed the protection limits of the airpurifying respirator.

Eyes Eye protection should be worn. If there is potential for splashing or spraying, chemical protective goggles and/or a face shield should be worn. If contact lenses are worn, consult an eye specialist or a safety professional for additional precautions. Suitable eye wash water should be available in case of eye contact with this material.

Skin Avoid all skin contact with this material. If conditions of use present any potential for skin contact, clean and impervious clothing such as gloves, apron, boots, and facial protection should be worn. Neoprene, Nitrile, Butyl Rubber or Viton glove material is recommended. When working around equipment or processes which may create the potential for skin contact, full body coverage should be worn, which consist of impervious boots and oilresistant coated Tyvek suit or other impervious jacket and pants.

Non-impervious clothing which accidentally becomes contaminated with this material should be removed promptly and not reworn until the clothing is washed thoroughly and the contamination is effectively removed. Discard soaked leather goods.

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Other Hygienic and Work Practices

Use good personal hygiene practices. If skin contact should occur, material should be removed from the skin with a waterless hand cleaner, and the affected area should then be washed with a mild soap and water. Wash hands and other exposed areas thoroughly before eating, drinking, smoking or using toilet facilities.

9. PHYSICAL and CHEMICAL PROPERTIES

Boiling Point: AP -54°F to 1100°F

Viscosity Units, Temp. (Method): N/DA

Dry Point: N/AP

Freezing Point: N/DA

Vapor Pressure, Temp. (Method): AP 1 to 2 at 100°F (REID-PSIA)

Volatile Characteristics: Appreciable

Specific Gravity (H₂O = 1 @ 39.2°F): AP 0.88

Vapor Sp. Gr. (Air = 1.0 @ 60°F - 90°F): N/DA

Solubility in Water: Negligible

PH: N/AP

Appearance and Odor: Thick light yellow to dark black colored liquid. Petroleum hydrocarbon odor.

Other Physical and Chemical Properties: Total sulfur = approx. 1.1% - 2.8%

Hydrogen sulfide content is less than 5 ppm dissolved in liquid

Vanadium = approx. 210 ppm

10. STABILITY and REACTIVITY

Stability Stable

Hazardous Polymerization Not expected to occur.

Other Chemical Reactivity N/AP

**Conditions to
Avoid**

Heat, sparks, and open flame.

**Materials to
Avoid**

Strong acids, alkalis, and oxidizers such as liquid chlorine and oxygen.

**Hazardous or
Decomposition**

Products

Burning or excessive heating may produce carbon monoxide and other harmful gases or vapors including oxides of sulfur and nitrogen.

11. TOXICOLOGICAL INFORMATION

Toxicological Information

The information found in this section is written for medical, toxicology, occupational health and safety professionals. This section provides technical information on the toxicity testing of this or similar materials or its components. If clarification of the technical content is needed, consult a professional in the areas of expertise listed above.

Prolonged/

Repeated

Exposures

IARC has determined there is "limited evidence for the carcinogenicity in experimental animals of crude oil" and "inadequate evidence for the carcinogenicity in humans of crude oil." IARC concludes that "crude oil is not classifiable as to its carcinogenicity to humans (Group 3)."

Crude oil administered orally to pregnant rats during gestation produced increased number of resorptions and decrease in fetal weight and length.

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Exposure to N-hexane at concentrations considerably higher than the current permissible exposure limit has reportedly been associated with peripheral neuropathy.

12. ECOLOGICAL INFORMATION

Not Available

13. DISPOSAL CONSIDERATIONS

Waste Disposal

Methods

Maximize recovery for reuse or recycling. Consult environmental professional to determine if state or federal regulations would classify spilled or contaminated materials as a hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Comply with all federal, state and local laws pertaining to waste management.

14. TRANSPORT INFORMATION

UN Proper Shipping Name Petroleum crude oil

UN Hazard Class 3

UN Number UN1267

UN Packing Group PGI

15. REGULATORY INFORMATION

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA), TITLE III

Section 311/312 Hazard Categories:

Immediate (acute) health hazard

Delayed (chronic) health hazard

Fire hazard

No chemicals in this product exceed the threshold reporting level established by SARA Title III, Section 313 and 40 CFR 372.

TOXIC SUBSTANCES CONTROL ACT (TSCA)

All components of this product are listed on the TSCA Inventory.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA)

This material is covered by CERCLA's PETROLEUM EXEMPTION.

(Refer to 40 CFR 307.14)

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 - PROPOSITION 65

PROP 65 WARNING LABEL:

Chemicals known to the State to cause cancer, birth defects, or other reproductive harm are found in gasoline,

crude oil, and many other petroleum products and their vapors, or result from their use. Read and follow

label

directions and use care when handling or using all petroleum products.

WARNING:

This product contains the following chemical(s) listed by the state of California as known to cause cancer or birth

defects or other reproductive harm.

MINERAL OILS, UNTREATED (c)

Other Prop 65 chemicals will result under certain conditions from the use of this material. For example, burning

fuels produces combustion products including carbon monoxide, a Prop 65 reproductive toxin.

(c) = Carcinogen

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Attachment 5

Chapter 25) Spill Response Safety

A. Scope and Objective

The focus of this procedure is to ensure the safety of all MSRC employees and MSRC contractors during spill response activities. The objective of this procedure is to establish minimum guidelines for all MSRC personnel and contractors working for MSRC to follow. The guidance contained in this procedure is based upon the Occupational Safety and Health Standard 29 CFR 1910.120, which should be referred to directly if necessary. This revision supersedes any other procedure for Spill Response Safety. This procedure provides employees with fundamental safety procedures not otherwise covered in other chapters of the Environmental, Health and Safety Compliance Procedure Manual. Issues relating to topics that are covered in other chapters of the Environmental, Health and Safety Compliance Procedure Manual will refer to the applicable chapters. Those chapters also apply during all spill responses.

B. Procedure

- 1) There are three basic tasks in providing an acceptable level of safety to personnel responding to an oil spill:
 - a) Identification of all physical, chemical and biological hazards.
 - b) Establishment of controls to reduce or eliminate the risks to exposed persons from the identified hazards.
 - c) Communicating the hazards, risks and controls to all persons potentially at risk.
- 2) MSRC uses the following forms for spill responses, and one form for documenting monthly meter calibration and bump tests. They are as follows:
 - a) Initial Site Entry Form - This form provides basic information for the protection of the assessment team entering the Exclusion Zone (the area where potential hazards may exist. No one may enter the Exclusion Zone until it has been properly assessed.) The form contains “Action Levels” of potentially hazardous substances that require employees and contractors to wear respiratory protection and “Action Levels” of such substances that require the assessment team to evacuate the area. The form requires air monitoring for oxygen, flammability, carbon monoxide, hydrogen sulfide, benzene, and the lower explosive limit (LEL) of the spilled substance. The form lists required and recommended personal protective equipment (PPE) and other required equipment and requires the Supervisor in Charge, the Environmental, Health and Safety Administrator (EHSA), or designee to conduct a pre-entry briefing for the assessment team. (See Attachment A.)

- b) Air Monitoring Log (Site Characterization Log) - Documentation of air monitoring equipment used at the particular spill response, together with time, weather, physical location and air monitoring results. (See Attachment B.)
- c) Air Monitoring Equipment Maintenance Log - Documents monthly air monitoring equipment calibrations and bump tests. The log details the date, time, span gas or other standard, and name of the person performing the calibration. (See Attachment C.)
- d) Specific Site Safety Plan - Universal three-page Specific Site Safety Plan developed by the API & ASTM and adopted by oil and gas industry operators. (See Attachment D.)
- e) MSRC Safety Meeting Roster – Documents and addresses safety topics discussed during all daily and shift safety meetings. (See Attachment E.)
- f) The EHSA or the Environmental, Health and Safety Manager (EHSM) shall determine Safety Plan documentation to be used in spill responses.

3) Site Assessment/Site Characterization

- a) Site Assessment or Site Characterization (the terms are interchangeable) is the first step in identifying hazards at the beginning of a spill response when very little information is known.
- b) The Site Assessment team shall conduct a visual inspection of the Exclusion Zone and surrounding environment to identify all physical, chemical and biological hazards and document the hazards.
- c) Prior to the Site Assessment, the Site Assessment team leader shall conduct a safety meeting to review any known hazards and prescribe all safety measures the Site Assessment team shall follow. This meeting will be documented on the Initial Site Entry Form. (See Attachment A.)
- d) Initial air monitoring shall be conducted during the Site Assessment and documented on the Air Monitoring Log. (See Attachment B.)
 - Atmospheric testing using direct reading instrumentation shall be performed in all spill site work locations where the presence of a particular contaminant may pose an immediate or long-term danger to human health or the environment.
 - Air monitoring pumps and any other instruments used to monitor air contamination will be “bump” tested immediately prior to use. The information gathered will be recorded on the Air Monitoring Equipment Maintenance Log. (See Attachment C.)
- e) Employee exposure monitoring shall be performed at the direction of the Incident Command to ensure employees are not exposed to airborne chemicals in excess of the levels established by 29 CFR 1910.1000 or substance specific standards. Monitoring

shall be performed by those employees specifically trained to perform sample collection, or by a competent third party consultant.

4) Specific Site Safety Plans

- a) After the spilled product has been identified, a review of the product's Material Safety Data Sheet (MSDS) and other product bulletins shall be conducted to determine hazards identified by the manufacturer of the product.
- b) The Supervisor in charge of a specific location or designee shall use the information gathered from the MSDS and Site Assessment to develop the Specific Site Safety Plan. The Specific Site Safety Plan, together with the Initial Site

Entry Form and the Air Monitoring Log, provides the information necessary to communicate safety information to the personnel who are potentially at risk.

- c) The Supervisor in charge of a specific location or designee shall update the Specific Site Safety Plans daily and/or prior to the start of each shift to incorporate any necessary changes. The EHSA shall review the Specific Site Safety Plan when possible and advise the Supervisor or designee accordingly.

5) Safety Plans

- a) The EHSA or designee shall develop a Safety Plan to encompass all MSRC operations at the spill response. The Safety Plan shall be updated daily and/or prior to the start of each shift. Spill site emergency procedures (such as medical, fire, and evacuation procedures) shall be detailed in the Safety Plan and shall be communicated to all employees. All information contained on the Specific Site Safety Plan, the Initial Site Entry Form and the Air Monitoring Log will also be used in the development of the Safety Plan. All the information collected by the Site Assessment Team shall be documented in the Safety Plan as well.
- b) Each employee, as a condition of employment, is required to comply with all MSRC health and safety procedures, the Safety Plan, and the Specific Site Safety Plan for each area where the employee is required to work.

6) Safety Meetings

- a) Prior to MSRC employees entering the Exclusion Zone, the Supervisor in charge, the EHSA, or designee shall conduct a safety meeting to communicate hazards documented on the Specific Site Safety Plan and the Safety Plan to employees entering the Exclusion Zone. Each attendee shall sign the Safety Meeting Roster to document his/her attendance.
- b) Daily Safety Meetings shall be conducted by the Supervisor in charge, EHSA, or designee at all field response sites prior to each shift to review potential hazards, changes in levels of PPE, special safety precautions, and to communicate any other information from the Safety Plan and Specific Site Safety Plan. Each attendee at the

Daily Safety Meetings shall sign the Safety Meeting Roster. Completed Safety Meeting Rosters are to be turned into the EHSA in charge.

C. Potential Hazards

1) Oxygen Deficiency

- a) Oxygen levels shall be recorded during all air monitoring evolutions.**
- b) Oxygen levels should be monitored especially outside in low-lying areas or when no wind is present. Oxygen readings below or above 20.8%, not attributed to meter drift, can indicate further investigation is necessary.**

2) Fire and Explosion

- a) Readings are detected on the combustible gas detector. Alarms on the detectors shall be set for 10% LEL. Personnel must evacuate the site at or above 10% LEL.

0% LEL is highly desirable. The EHSA shall advise employees what steps to take if readings are above 0% LEL and below 10% LEL. Firefighting foams may be useful in reducing the release of flammable vapors.

- b) Only certified intrinsically safe or explosion-proof equipment shall be used in the immediate vicinity of the spill, especially if the LEL is above 0%. Personnel must keep in mind that electronic devices such as hand held radios, flashlights, cellular phones, pagers, tape recorders, etc and other similarly powered electronic devices can or have been sources of ignition. Internal combustion engines shall only be used at a safe distance, normally at least 100 feet upwind of the spill. Use of electronic devices shall be in accordance with the Incident Command's direction, and specified on the Safety Plan.
- c) The following is a list of conditions which can increase the risk of fire:
 - Presence of volatile hydrocarbons, sorbents or debris soaked with volatile hydrocarbons.
 - Presence of hot surfaces (e.g., exhaust pipes, catalytic converters)
 - Electrical sparks and static electricity buildup
 - Open flames, such as matches and lighters
 - Still air which can allow vapors to accumulate

3) Health Hazards

- a) In addition to posing a potential fire and explosion hazard, hydrocarbon vapors may also pose a health risk to response personnel.
 - Some crude oils contain harmful concentrations of hydrogen sulfide gas. Hydrogen sulfide can be lethal at concentration levels as low as 300 parts per million (.03%). Exposure to hydrogen sulfide can produce headaches, dizziness, and nausea, which should be treated as warning symptoms. Extended exposure can lead to unconsciousness and permanent injury. Hydrogen sulfide is also highly flammable, posing a fire or explosion hazard. This gas is slightly heavier than air and will have a tendency to stay in the area of release unless sufficient wind is available to disperse it. Hydrogen sulfide smells like rotten eggs but, since it also rapidly deadens the sense of smell, odor is not a good warning mechanism.
 - Gasoline and crude oils can also contain benzene, a known carcinogen. (Threshold Limit Value (TLV) = 0.5 ppm.) Even a short exposure to benzene, whether by ingestion or by breathing concentrated vapors, can affect the central nervous system. Symptoms from mild exposure include dizziness, weakness, euphoria, headache, nausea, vomiting, tightness in chest, and staggering. If exposure is more severe, symptoms progress to blurred vision, tremors, shallow and rapid respiratory breathing, ventricular irregularities, paralysis, and unconsciousness. At high concentrations, benzene is also classified as an extremely flammable liquid with a flashpoint of 12 degrees F.
- b) If the site assessment team determines that harmful levels of any hazardous substance exist, or when hydrogen sulfide or benzene may be present, a qualified individual shall conduct the air monitoring. Following such a determination, no person shall enter the Exclusion Zone until approved by MSRC management and/or the Incident Command.

4) Unsafe Conditions

- a) Response personnel must continually guard against creating or becoming a victim of unsafe work practices.
- b) Precariously positioned and poorly maintained tools and equipment, unstable working surfaces, fatigue, slips, trips, and falls, are all common hazards associated with emergency spill response.
- c) Employees must always wear the required PPE detailed on the Safety Plan; expedience is not an excuse for failing to do so.
- d) Employees must use good judgment at all times and try to eliminate potential risk factors.

5) Temperature Extremes

- a) MSRC personnel are required to dress according to the conditions at the site and to wear appropriate PPE to prevent hypothermia, frostbite, and heat stress.
- b) The EHSA, Supervisor or designee will advise on appropriate dress and PPE during Daily Safety Meetings.

6) Electrical Hazards

- a) Extreme caution must be taken near overhead or underground power lines, especially when operating cranes and/or moving spill equipment, to avoid potential electrical discharges. The use of metal ladders around live electrical lines should be avoided.
- b) Caution must also be taken when working around generators, electric cables, and extension cords, especially in spill responses around water or in wet conditions.

7) Noise Exposure

- a) Working in proximity of running engines, motors, and hydraulic systems can lead to noise overexposure. Earplugs and other types of hearing protection screen out high-noise frequencies and can actually improve a person's ability to hear voices in high noise areas.
- b) The EHSA or Supervisor, through Daily Safety Meetings and the Safety Plan, shall advise employees and contractors on the use of hearing protection.

D. General Considerations

- 1) No MSRC employee or contractor working for MSRC shall enter the Exclusion Zone unless authorized to do so and in full compliance with the Safety Plan/Specific Site Safety Plan.
- 2) All MSRC employees and contractors working for MSRC are required to report all incidents, accidents, unsafe conditions, practices, or circumstances to their immediate Supervisor in charge and/or the EHSA in charge immediately.
- 3) Personnel performing response operations shall use the "buddy" system (pairs). Buddies should prearrange communication methods to allow for breakdown of radio contact. Communication or visual contact will be maintained between buddies at all times.
- 4) Walking or working under suspended loads is forbidden.

- 5) All personnel shall avoid contact with potentially contaminated substances, surfaces and any wildlife.
- 6) No person shall depart from the Exclusion Zone unless by means of the Contamination Reduction Zone and by the proper decon procedures detailed in the Safety Plan.
- 7) All contaminated waste shall be removed and properly disposed of in compliance with local, state, and federal regulations deemed applicable by the Incident Command or the Responsible Party.
- 8) Personnel shall contact their immediate Supervisor and the EHSA concerning all safety issues on all spill responses.

E. Responsibilities

Individual	Responsibility
Employee	<ul style="list-style-type: none"> • Follow instructions given at Daily Safety Meetings • Follow protocol detailed on the Safety Plan • Report all incidents, accidents, and safety issues to supervisor and EHSA
Supervisor	<ul style="list-style-type: none"> • Follow instructions given at Daily Safety Meetings • Conduct/Document Daily Safety Meetings • Develop Specific Site Safety Plan as applicable • Communicate information detailed on Safety Plan to field personnel • Document all incidents, accidents, and safety issues and report to EHSA
Environmental, Health and Safety Administrator (EHSA)	<ul style="list-style-type: none"> • Conduct/Document Daily Safety Meetings if practical and available to do so. • Develop and communicate Safety Plan to Supervisors and field personnel when appropriate. • Document/Investigate all incidents/accidents, and safety issues • Maintain all safety related documentation. • Provide applicable documentation to RP and/or government agencies.

F. Training

- 1) MSRC employees with field responsibilities in Emergency Response Operations on spill responses shall be trained at a minimum in accordance with the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard 29 CFR 1910.120(q)(6)(iii) for Emergency Response to Hazardous Substance Releases – Hazardous Technician level, which includes the following training requirements:
 - a) 24 Hours Initial Training
 - b) Demonstrated Competencies
 - c) Annual Refresher

AND if applicable:

- 2) MSRC employees with field responsibilities working in Post-Emergency clean-up activities shall comply at a minimum with the following General Spill Site Worker requirements: Upon completion of the emergency response, if it is determined that it is necessary to remove hazardous substances, health hazards and materials contaminated with them (such as contaminated soil or other elements of the natural environment) from the site of the incident, the employer conducting the clean-up shall comply with sections (b) through (o) of the OSHA Standard 29 CFR 1910.120, which includes the following training requirements found in 29 CFR 1910.120 (e)(3)(i):
 - a) 40 Hours Initial Training
 - b) 24 Hours Field
 - c) 8 Hours Refresher

Note: MSRC Emergency Response personnel may perform post emergency clean-up activities without further Hazwoper training as long as the regional EHSA can certify by documentation that the personnel have the skills and knowledge to do so safely. Reference OSHA Publication #3172 – Training Marine Oil Spill Response Workers Under OSHA’s Hazardous Waste Operations and Emergency Response Standard, page 7, and 29 CFR 1910.120(e)(9).

- 3) All MSRC employees with field responsibilities who may conduct site assessments, or who may be working in potentially hazardous atmospheres shall also be medically qualified fit for duty to work with hazardous materials and to use respiratory protective equipment per 29 CFR 1910.134, including a current respirator/SCBA (self contained breathing apparatus) fit test. (See Chapter 23 for fit test form.)
 - The regional Employee Services Administrator (ESA) shall provide a copy of the applicable MSRC employee’s fit for duty form to their respective regional EHSA to include in the employee’s training file, which should be attached to the current respirator fit test form.

- 4) Vessel crew members not directly involved with the spill clean up shall comply at a minimum with the First Responder – Operations Level per 29 CFR 1910.120(q)(6)(ii) which includes the following training requirements:
 - a) 8 Hours Initial Training
 - b) Demonstrated Competencies
 - c) Annual Refresher
- 5) All MSRC employees with field responsibilities and vessel crew members shall comply with the annual refresher training requirements found in 29 CFR 1910.120 (q)(8) for Emergency Response personnel and 29 CFR 1910.120 (e)(8) for General Site Worker personnel.
- 6) MSRC Supervisors and Managers with field responsibilities who assume a supervisory role in the spill response shall comply with the additional training requirements found in 29 CFR 1910.120 (q)(6)(v) for Emergency Response personnel and 29 CFR 1910.120 (e)(4) for General Site Worker personnel
- 7) The regional EHSA and/or the EHSM shall determine those employees with field responsibilities.

G. Documentation

- 1) Regional EHSAs shall maintain all HAZWOPER documentation and respirator fit test forms for all regional personnel with field responsibilities and shall make such documentation available upon request by authorized entities. Copies of fit for duty forms, supplied by regional ESAs, shall be attached to the fit test forms.
- 2) Regional EHSAs shall obtain written certificates of compliance from authorized training facilities for all MSRC employees' HAZWOPER training and/or refresher training, or shall supply similar documentation if in-house training was provided. The certification form located in Attachment F below, or similar documentation, shall be used.
- 3) The regional EHSA shall provide training ID cards to applicable personnel to carry on their person during spill responses.

F. References

- 1) The following procedures in the MSRC Environmental, Health and Safety Compliance Procedure Manual should be referenced if applicable to the particular spill response:
 - a) Chapter 4 – Confined Space Entry (Vessel)
 - b) Chapter 6 – Control of Hazardous Energy (Lockout/Tag out)
 - c) Chapter 8 – Electrical Safety
 - d) Chapter 10 – Equipment Safety
 - e) Chapter 12 – Fall Protection

- f) Chapter 13 – Fire Extinguishers
- g) Chapter 14 – Flammable/Combustible Liquids
- h) Chapter 15 – Hazard Assessments
- i) Chapter 16 – Hazard Communications
- j) Chapter 17 – Hearing Conservation
- k) Chapter 19 – Incident/Accident Reporting
- l) Chapter 21 – Personal Protective Equipment (PPE)
- m) Chapter 23 – Respiratory Protection
- n) Chapter 28 – Water Safety

(Note: The OSHA Standard for each of the topics listed above is detailed in the cited procedure.